E1 $\int 3x^2\,dx$

$= 3\int x^2\,dx$

$= 3\cdot\frac{1}{2+1}x^{2+1} + C, \quad C \in \mathbb{R}$

$= \cancel{3}\cdot\frac{1}{\cancel{3}}x^3 + C$

$= x^3 + C$

TARK. $D(x^3+C) = 3x^2 + 0 = 3x^2$

E2 $\int (x^3 - 5)\,dx$

$= \int x^3\,dx - \int 5\,dx$

$= \frac{1}{4}x^4 - 5x + C$

E3 $\int e^{3x}\,dx$

$= \frac{1}{3}\int \cancel{x}\cdot e^{3x}\,dx$

kerr. termi

sisäf. der.

$= \frac{1}{3}e^{3x} + C$

$s(x) = 3x$
$s'(x) = 3$

$\cancel{3}\cdot\frac{1}{\cancel{3}} = 1$

E4 $\int \sin 5x\,dx$

$= \frac{1}{5}\int \cancel{5}\sin 5x\,dx$

$= \frac{1}{5}(-\cos 5x) + C$

$= -\frac{1}{5}\cos 5x + C$

$s(x) = 5x$
$s'(x) = 5$

$5\cdot\frac{1}{5} = 1$

E5 (kirjasta E3 / s. 196)